WRECKAGE AND IMPACT

The Safety Board investigator-in-charge performed an on-scene wreckage documentation and initial examination on September 12, 2013, the day following the accident.

The accident site was located on adjacent to the airport's perimeter, with the debris stretching over 200 feet from the first impact marking to the farthest debris found (balance weight from the upper vertical stabilizer); the main wreckage was situated immediately after the initial impact crater. In character, the flat terrain was comprised of hard dirt and rocks, populated by brush typical of the eastern Wyoming region. The global positioning satellite (GPS) coordinates for the main wreckage were approximately 43.590556 degrees north latitude and -110.743333 degrees west longitude, at an elevation of about 6,400 feet mean sea level (msl).

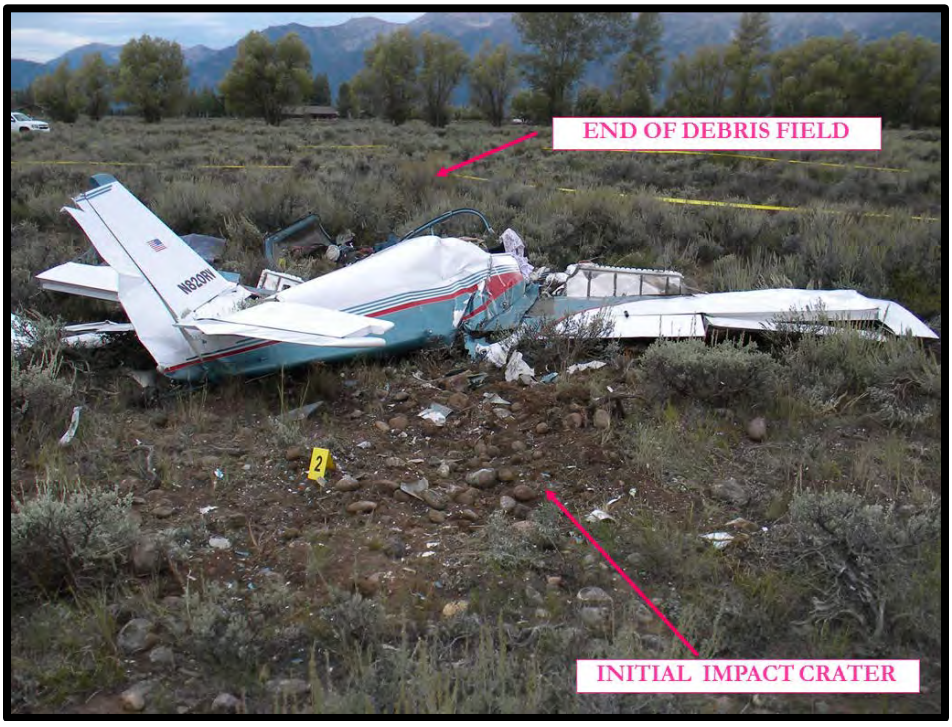


Figure 1: Accident Site Debris Field

The main wreckage came to rest on a with the nose on a heading of about 285 degrees and the majority of the crush damage was to the engine and cockpit section with the empennage and tail section sustaining the lesser damage. The main wreckage consisted of the major airframe components and the engine; the propeller, canopy and top portion of the cowling were found further down from the debris field.

Figure 2: Main Wreckage

The first identified point of impact consisted of a crater about five feet long and four feet in diameter, where engine pieces and composite fragments were imbedded in the compacted and disrupted dirt. The main wreckage was located about five feet from the initial crater with an overall energy path of about 250 degrees. Located in the crater was the communication antennas that would normally be situated on the front underbelly; just forward of that were pieces of the exhaust manifold (which were 13 feet aft of where the engine came to rest).

There were two similar elongated areas of disrupted dirt that were perpendicular to the main impact crater of the first impact point. The right disrupted dirt area measured about 11 feet from the initial impact crater and small fragments of green/blue lens were located at the end (about 12 feet aft of where the lens housing and right wing had to come to rest). The left impact elongated depression measured about 12 feet in length. Red lens fragments were found adjacent to that area the wing tip would normally be situated at the end of the outboard left-wing leading edge. The depressions were consistent in size and orientation to that of the wings, which each measured about 10 feet and 3 inches.

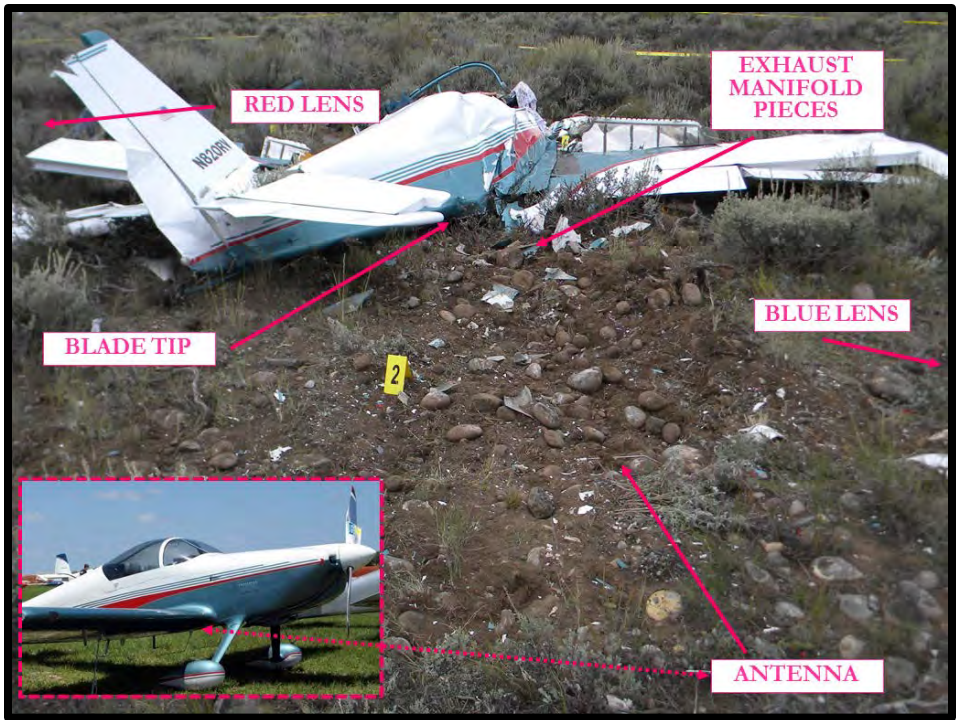


Figure 3: First Identified Point of Impact

The debris field orientation was on a heading of 261 degrees. In front of the first identified impact point were pieces of Styrofoam and coil consistent with pieces of the antenna normally be situated on the front underbelly. Forward of that were pieces of the exhaust system from the engine and to the right metallic smudges were found on rocks. From the first identified impact point to the where the engine came to rest was 17 ft and from the exhaust pieces to the engine was 13 ft.

The tail was intact with the rudder and vertical stabilizer still attached. The rudder contained several bends but remained attached to its respective fittings. The upper cap of the vertical stabilizer was found at the far end of the debris field about 90 feet from the main wreckage. The elevator surfaces remain attached to the horizontal stabilator and the trim tab was attached, positioned in a nose-low configuration.

The cockpit area sustained major crush damage to the forward section and the right and left fuselage sides showed the near 45° angle crush angles aft of the cockpit area. The fuselage sustained crush damage to the left side and was accordion against the left wing. The left wing tip located about 2 ft from the left wing; the flap was attached on the inboard section and had come detached from the control rod on the outboard section. The left aileron was attached on the inboard control arm.

The right side fuselage adjacent to the wings had sustained crush damage and was accordianed backward in about 45 degree crush angle. The right flap was attached to his respective hinges and ailerons outboard section had become free of the control rod. The inboard side of the right-wing leading-edge had come forward and was detached off the rivet line consistent with full fuel tanks.

Figure 4: Fuselage Crush Angle

Figure 5: Main Wreckage from Viewed from Front

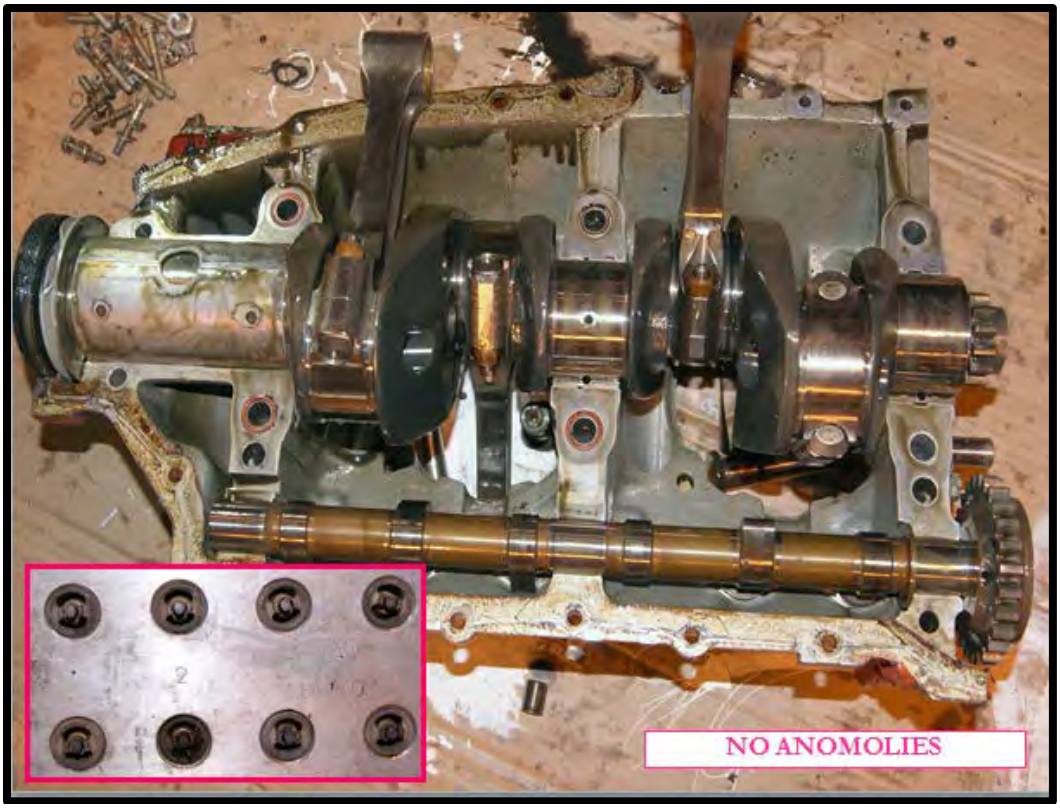


Figure 6: Engine

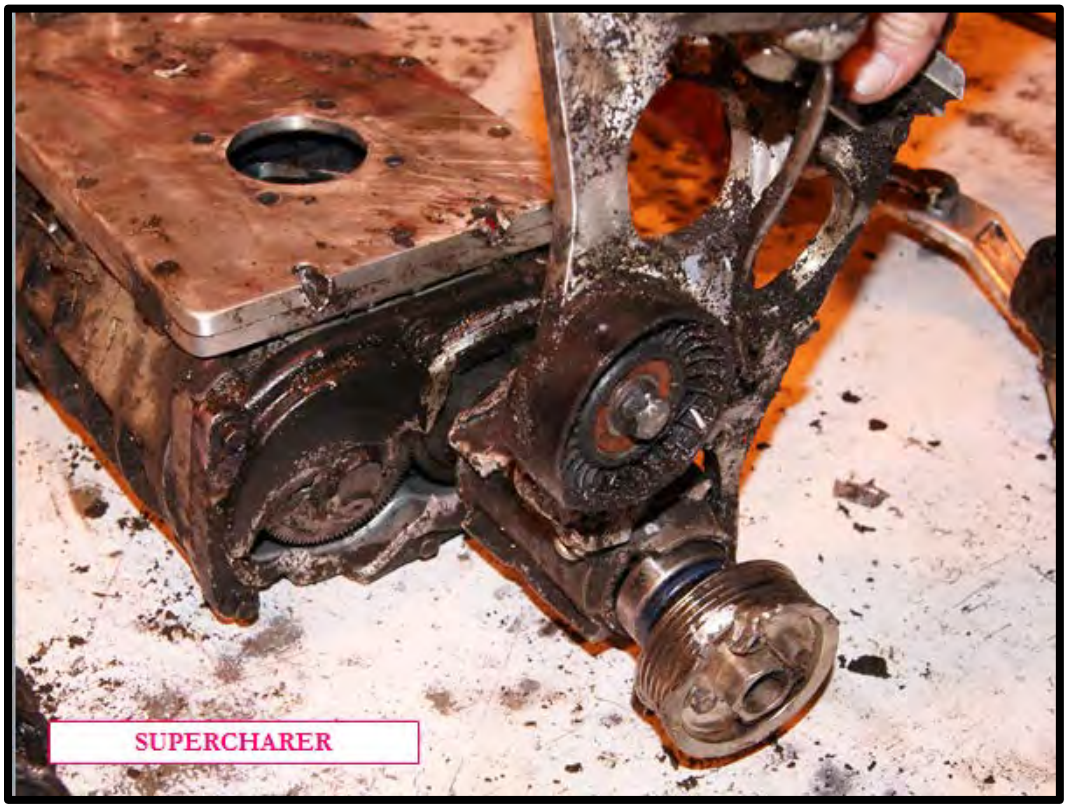


Figure 7: Supercharger

Figure 8: Supercharger and Serpentine Belt

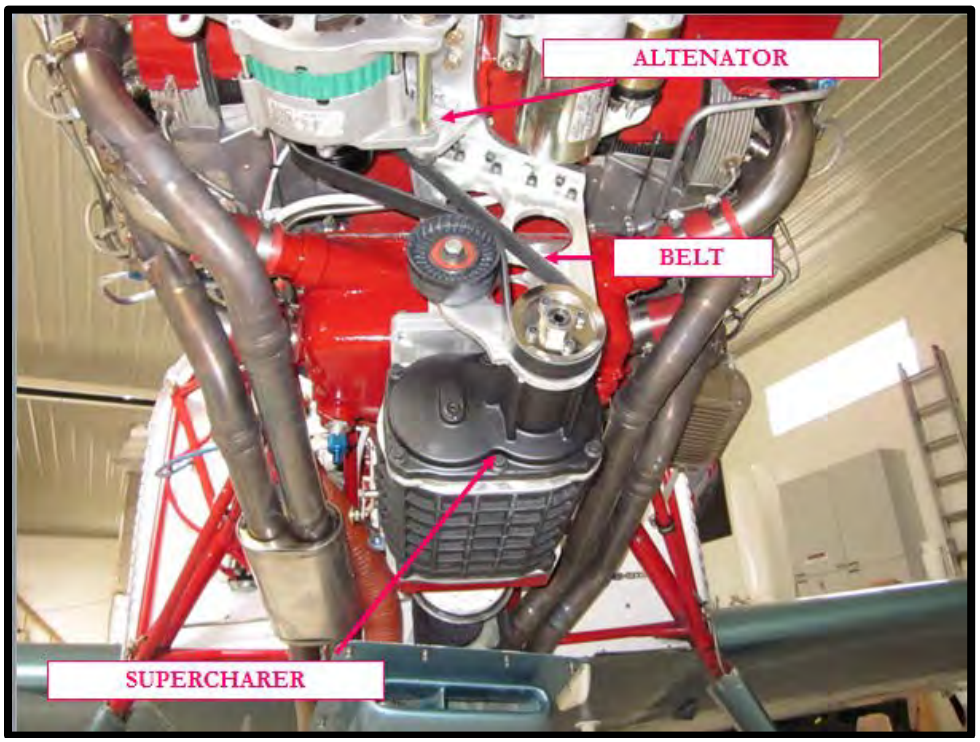
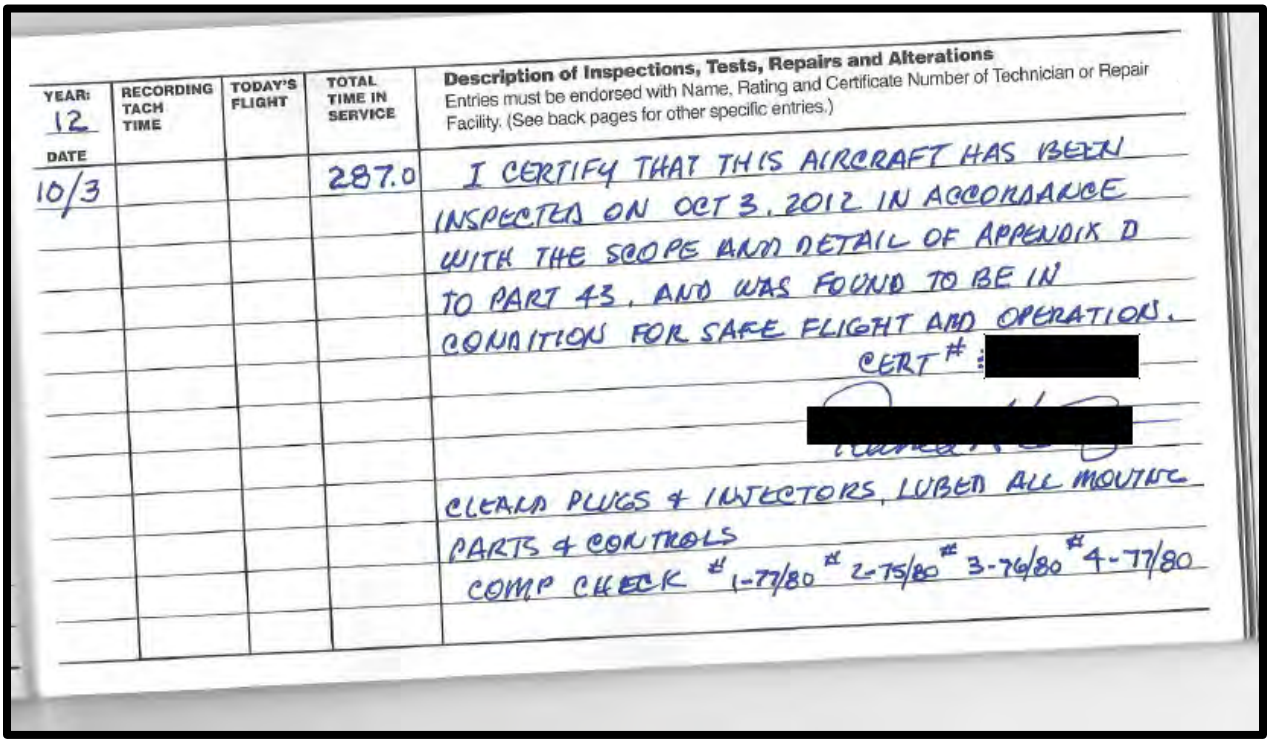


Figure 9: Supercharger at Installation

RECORDS



YEAR: 12 DATE	RECORDING TACH TIME	TODAY'S FLIGHT	TOTAL TIME IN SERVICE	Description of Inspections, Tests, Repairs and Alterations Entries must be endorsed with Name, Rating and Certificate Number of Technician or Repair Facility. (See back pages for other specific entries.)
10/3			287.0	I CERTIFY THAT THIS AIRCRAFT HAS BEEN INSPECTED ON OCT 3, 2012 IN ACCORDANCE WITH THE SCOPE AND DETAIL OF APPENDIX D TO PART 43, AND WAS FOUND TO BE IN CONDITION FOR SAFE FLIGHT AND OPERATION. CERT #: [redacted] [redacted] CLEAN PLUGS & INJECTORS, LUBED ALL MOVING PARTS & CONTROLS COMP CHECK #1-77/80 #2-75/80 #3-76/80 #4-77/80

Figure 10: Last Annual Inspection